

Community Well-Being

- Green Communities
- Mass Transit Systems
- Personal Transportation
- Regional Partnerships

Sprawl and Fat Americans –

Sprawl adds an average 6 lbs to Americans waistlines nationally, includes 2/3 of all Americans

Green Communities

- Low-impact development (Eco-village- Leesburg, VA; Davis, CA)
- Aggressive community programs (City of Santa Monica, CA; Chattanooga, TN; many more)
- A Sustainable Oregon for the 21st Century
- 100% Renewable Energy Commitment - Vashnon, WA, & UC-System
- San Francisco and its municipal Precautionary Principle

Low Impact Development- "Eco- Village"

Incorporates energy efficiency, renewable energy, environmentally preferable materials, and waste minimization



Fig.8: Elevation of the Common House at Eco Village



Low Impact Development- Village Homes

Davis, California

- Low impact development including sustainable water management practices and greenbelt based development
- Decreased costs for neighborhood upkeep, heating, storm water drainage problems, and traffic issues
- Solar design for houses and solar hot water heater

Village Homes, Davis California

Swales, infiltration
basins, vegetated
filter strips

Savings:
\$800/lot plus
more green
space, crop
sales, cooling,
quality of
life, market value.



GreenWood Ranch Estates – Phoenix, AZ

- First substantial privately financed completely grid-free community
- 487 5-acre ranchettes
- Basic 1650W system
- Under \$100K for 3 bed, 2 bath

Mass Transport Systems

- High-speed tilt train systems, already in place in Great Britain and Sweden (best for long distance commuting)
- High-speed railways, electric multiple unit (EMU) systems (can be used as metro systems, or long distances)
- Automated people movers (good for a constant route in a city or town)
- Public bus system (cover isolated smaller areas)



MagLev Train

- Electromagnets lift the cars and push them forward
- First one to be opened in Shanghai in January 2004.
- 270 MPH



- A 30 minute train ride becomes a 8 minute one

Personal Automated Transit

- Public transportation with integrated urban system.
- Less costly than other transit options
- By removing intermediate stops



Personal Transportation

- Pedestrian zones
- Segway
- Share-a-bike
- Regional car-share services (Atlanta)



Working with the Region

Fort Lewis for cleaner air...

Regional Development and Fort Bragg

- Private Lands Initiative
- Joint Land Use Study
- Partnerships with
Nature Conservancy




New York City Watershed Agreement

In 1990, EPA mandated that all public supplies of surface water be filtered for microbes. New York would need to spend \$7B dollars for 9M residents to meet these mandate – what to do?

NYC Watershed Agreement:

- Water quality, development, and resource protection are more strictly monitored by the rural areas of the Catskill Mtns.
- NYC financially sponsors these programs with help from the state.
- Better performance without upgrades





Working with Community Towards Sustainability

New York City, the State, and Catskills Watershed

- **New York City has some of the cleanest drinking water in the world**
- **The water source is the Catskill Mountain Watershed (1,600 sq mi)**
- **In 1990 EPA mandated that all public supplies of surface water be filtered for microbes**
- **spend \$4-\$6 billion dollars to meet these mandates**

Approach

- NYC worked with upstate communities on land use, development planning, and agricultural best management practices that would improve water quality.
- Communities and NYC purchased select properties to be held undeveloped and in public trust.
- NYC spent \$550 million to improve their water system, upgrade aging sewage treatment plants, and replace failing septic systems in the Catskill watershed area
- Another \$278 million has been spent for conservation easements and partnerships to protect forest lands
- The state of New York is also contributing funds to these programs

Results

Water quality improved to the point where the investment in system upgrades for systems within watershed was unnecessary

Cost Avoided = **\$6 Billion**

Open Space preserved = 258,716 acres

Total investment = \$833 M

Napa California - How a town can live with a river and not get soaked

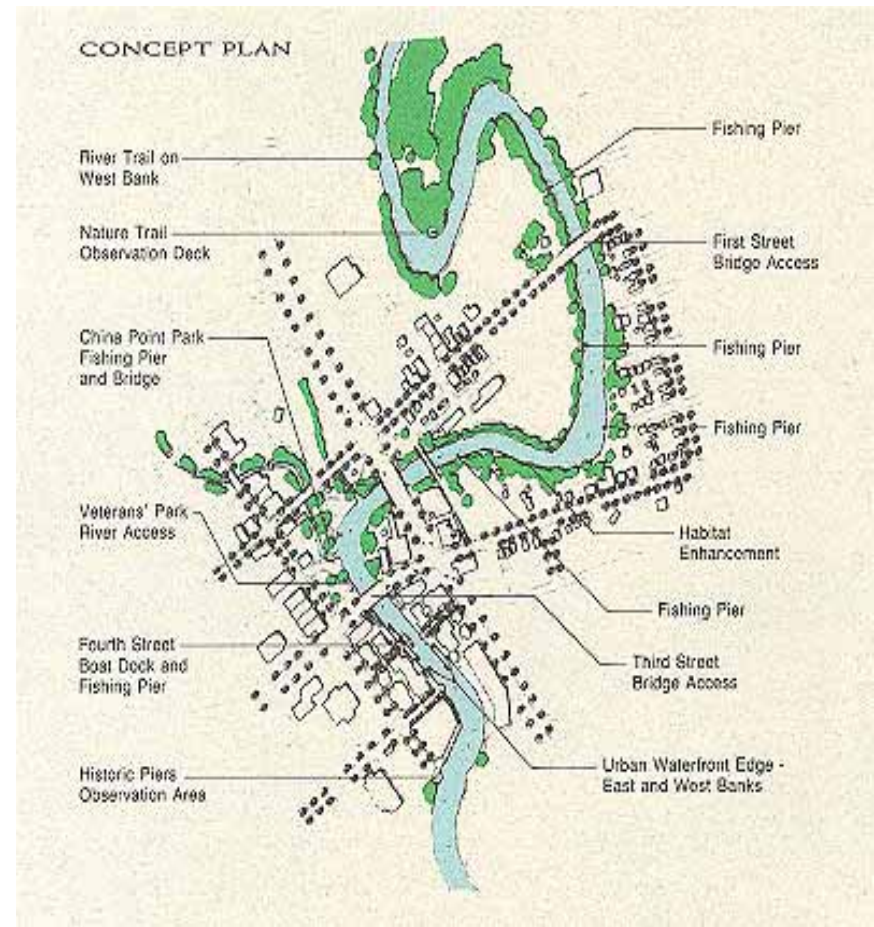
By the late 1980s, the Napa River was more of a liability than an asset:

- **frankly ugly**
- **extensive levee system**
- **periodic flooding still a major problem**
 - **\$542M property damage since 1960**
 - **3 deaths during one flood**
- **dying downtown**



The Napa River flood control project

- Local community voted down 3 Corps proposals to straighten and channelize the river
- Community worked with the Corps to develop a precise definition of a “living river”
- Concept was to restore river and let it run free in original flood plain



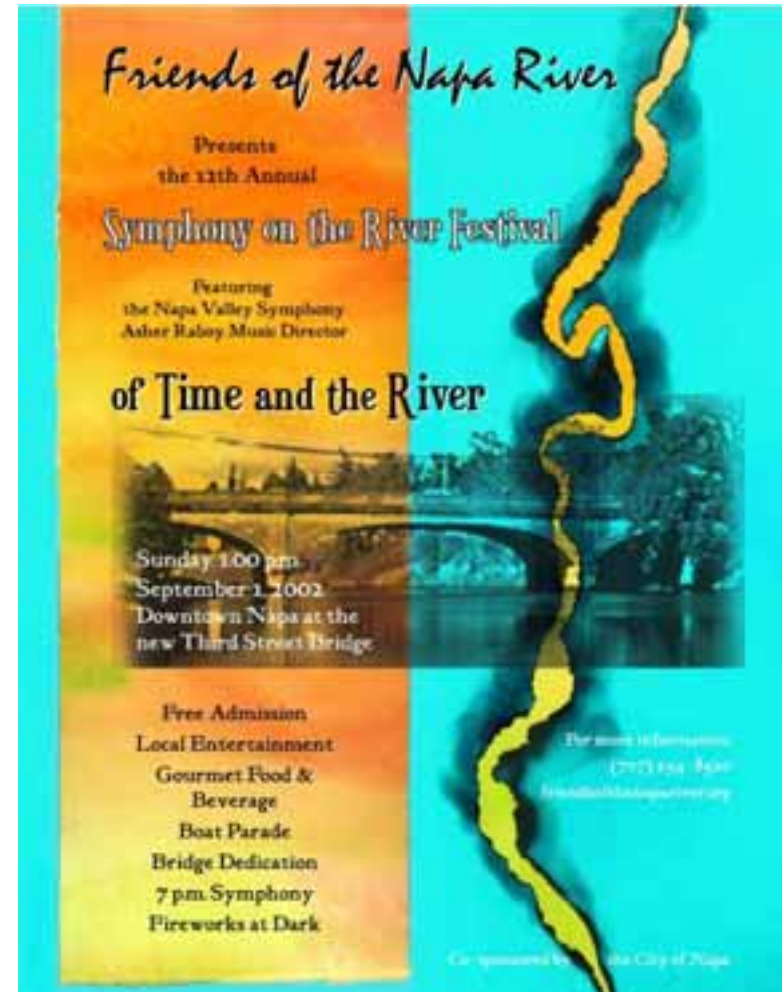
The Napa River “flood promotion” project

- Total cost: \$240M
GULP!
- County residents voted to raise sales tax \$3.9M/year
- 300 people/businesses relocated
- 9 bridges removed; 5 replaced at higher locations



Results

- Estimated \$22M/year avoided flood damage to property
- Flood insurance rates reduced 20%
- Commercial real estate values up almost 20%
- A revitalized river and city



The Napa River flood promotion project

"The public can decide its own future...as long as you have a really *loud* public."

Karen Rippey
former officer Friends of the Napa River
current USACE Sacramento District employee



Private Refuges – Wisconsin's Aldo Leopold Reserve

- Farming and Conservation Together Committee – a balance of conservation and farming to serve the entire community
- Private organization – overseeing wetlands and upland conservation projects
- Nationwide - Over 1.75 million acres
- Effective local citizen stewardship

State Venture Capital Funds

- In Michigan – Over \$150 million dedicated for alternative energy, life sciences, fuel cells, and advanced manufacturing companies
- Consists of tax credits, low interest loans, and state empowerment zones.

In 2002, clean technology companies drew close to \$1.1B in venture funding.